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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/609,513	07/03/2000	Ted Y. Tsai	47753.c2	1686

408 7590 03/01/2002

LUEDEKA NEELY & GRAHAM, P.C.
P O BOX 1871
KNOXVILLE, TN 37901-1871

EXAMINER

ALVO, MARC S

ART UNIT	PAPER NUMBER
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1731

8

DATE MAILED: 03/01/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

NG-8

Office Action Summary	Application No.		Applicant(s)	
	09/609,513		TSAI, TED Y.	
	Examiner		Art Unit	
	Steve Alvo		1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 January 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 10, 11, 13-17, 19-26, 29-37, 39-42 and 44-48 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 10, 11, 13-17, 19-26, 29-37, 39-42 and 44-48 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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The Declaration filed on January 4, 2002 under 37 CFR 1.131 has been considered but is ineffective to overcome the WO 95/27100 and DEVENYNS references.

See MPEP 715.07(c)

Applicant has not established a date of completion of the invention in the United States, in a NAFTA member country on or after December 8, 1993 or in a WTO member country other than a NAFTA member country on or after January 1, 1996.

See 37 CFR 1.131 reproduced below:

37 CFR 1.131 Affidavit or declaration of prior invention.

(a) When any claim of an application or a patent under reexamination is rejected, the inventor of the subject matter of the rejected claim, the owner of the patent under reexamination, or the party qualified under §§ 1.42, 1.43, or 1.47, may submit an appropriate oath or declaration to establish invention of the subject matter of the rejected claim prior to the effective date of the reference or activity on which the rejection is based. The effective date of a U.S. patent, U.S. patent application publication, or international application publication under PCT Article 21(2) is the earlier of its publication date or date that it is effective as a reference under 35 U.S.C. 102(e). Prior invention may not be established under this section in any country other than the United States, a NAFTA country, or a WTO member country. Prior invention may not be established under this section before December 8, 1993, in a NAFTA country other than the United States, or before January 1, 1996, in a WTO member country other than a NAFTA country. Prior invention may not be established under this section if either:

(1) The rejection is based upon a U.S. patent or U.S. patent application publication of a pending or patented application to another or others which claims the same patentable invention as defined in § 1.601(n); or

(2) The rejection is based upon a statutory bar.

(b) The showing of facts shall be such, in character and weight, as to establish reduction to practice prior to the effective date of the reference, or conception of the invention prior to the effective date of the reference coupled with due diligence from prior to said date to a subsequent reduction to practice or to the filing of the application. Original exhibits of drawings or records, or photocopies thereof, must accompany and form part of the affidavit or declaration or their absence satisfactorily explained.

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 10, 11, 13-17, 19-26, 29, 31, 32, 36, 37, 39-42, 44 and 46 are rejected under 35 U.S.C. 103(a) as obvious over EP 622 491 in view of DEVENYNS et al ("Optimal Use of Hydrogen Peroxide To Design Low AOX ECF Sequences") or NONNI or SERGEYEV et al with or without SINGH ("The Bleaching of Pulp", pages 126-127).

EP 622 491 teaches in Example VIII) bleaching digested Kraft (sulphate) pulp with a chelating agent at a pH of 1.8 to 2.0 for 25 minutes at 45 °C during a chlorine dioxide bleaching stage (DQ) and then bleaching the pulp in a final bleaching stage (PO) with hydrogen peroxide (P) to provide a pulp with high strength (e.g. high viscosity) and viscosity (TABLE III), high brightness (page 2, lines 38-42) and reduce the level of chlorine containing compounds (page 10, lines 15-17). See EP 622 491, page 4, lines 12-13 and 30-35, and lines 51-56 for using a pH up to 5.0 in a combined chelating and delignifying stage, e.g., the (DQ-stage of Example VIII) for using a pH of 1.5 to 5.0 in the acid stage and a pH of 1.5 to 13 during the chelating stage.

Example VIII uses 1.5 kg/ton dry pulp chelating agent. It would have been obvious to maintain the pH of EP 622 491 at a pH of 1.5 to 5.0 during the DQ-stage of Example VIII as such a pH range is taught by EP 622 491 for a combined D and Q-stage (page 4, lines 12-13 lines 51-56).

Claims 29 and 44 are rejected as EP 622 491 teaches using Ca and Mg stabilizers in the peroxide stage. It would have been obvious to further increase the brightness of EP 622 491 by using two chlorine dioxide stages separated by an alkaline extraction as such a sequence is well known in

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the art to be more efficient and provide better brightness than a single D-stage. Such a sequence, e.g. DEDQ is taught by DEVENYNS et al prior to a P bleaching stage. It would have been obvious to one of ordinary skill in the art to further improve the bleaching of EP 622 491 by using the DE stages of DEVENYNS et al before the (DQ)P-stage of EP 622 491 rather than the single D-stage. It would have been obvious to the routineer that a DE(DQ)P sequence would provide increased bleaching compared to the single chlorine dioxide sequence ((DQ)P of EP 622 491. Or NONNI teaches the alternativeness of bleaching oxygen-delignified pulp with D or DED (column 4, line 41). It would have been obvious to substitute the DED bleach sequence of NONNI for the D-stage of EP 622 491 as their alternativeness is taught by NONNI. It would have been obvious to one of ordinary skill in the art to improve the extraction of DEVENYNS et al by adding an oxidizing agent as taught by NONNI. . Or obvious to use a chelating agent in the first D-stage of EP 622 491 as taught by SERGEYEV et al to increase brightness and strength. It would have been obvious to add the chelating agent to both D-stages of EP 622 491 as SERGEYEV et al integrating Q and D stages prior to a P-stage. This would apply to both chlorine dioxide stages of EP 622 491. It would have been obvious to add O and/or P during the extraction stage, as such is taught by SERGEYEV et al. If necessary it would have been especially obvious to use a two D-stages separated by extraction rather than a the single D-stage of EP 622 491 as the use of two chlorine dioxide stages (DED) is known to give higher brightness without significant strength loss than a single stage as taught by the SINGH text, e.g. page 127, 10-13. The use of oxygen and peroxide are well known in the art to improve the alkaline extraction of pulp, see NONNI.

Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP 622 491 in view of DEVENYNS et al or NONNI with or without SINGH as applied to claim 36 above, and further in view of PROUGH.

It would have been obvious to one of ordinary skill in the art that the chelating agent of EP 622 491 could be added during a wash stage as such addition of a chelating agent would have been obvious from the teachings of PROUGH.

Claims 30, 33-35, 45 and 47 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 622 491 in view of DEVENYNS et al or NONNI with or without SINGH as applied to claim I above, and further in view of WO 95/27100.

WO 95/27100 teaches a (DQ)P and (DQ)PDP bleach sequences similar to the sequences of EP 622 491 and DEVENYNS et al and teaches that the chelating agent can be added to the first chlorine dioxide stage (Table I) and Example 3. It would have been obvious to add the chelating agent in the first chlorine dioxide stage in addition to the second chlorine dioxide stage of DEVENYNS et al to obtain the additional improvement in brightness and pulp strength taught by WO 95/27100.

The argument that NONNI does not teach a final P-stage is not convincing as NONNI is merely being used to show the obviousness of substituting a DED bleach sequence for a single D-stage. It is noted that such a sequence appears to be well known in the art, see the instant specification, page 4, lines 26-28, wherein it is stated that "there is typically a washing stage and/or an extraction stage (E) after each halogen stage" (emphasis added). The use of multiple chlorine dioxide stages with an extraction stage between them is well known in the art. It is well known that two bleach stages would provide better bleaching than a single stage. As evidenced by NONNI it would have been obvious to place an extraction stage between the chlorine dioxide stages when using multiple (two) chlorine dioxide stages.

The arguments with respect to DEVENYNS is not convincing as it would have been obvious to further increase the brightness of EP 622 491 by using two chlorine dioxide stages separated by an alkaline extraction as such a sequence is well known in the art to be more efficient and provide better brightness than a single D-stage. Such a sequence, e.g. DEDQ is taught by DEVENYNS et al prior to a P bleaching stage. It would have been obvious to one of ordinary skill in the art to further improve the bleaching of EP 622 491 by using the DE stages of DEVENYNS et al before the (DQ)P-stage of EP 622 491 rather than the single D-stage. It would have been obvious to the routineer that a DE(DQ)P sequence would provide increased bleaching compared to the single chlorine dioxide sequence ((DQ)P of EP 622 491.

The argument that SINGH is a post bleaching sequence is not convincing as EP 622,491 is being relied on to teach a final peroxide stage after chlorine dioxide bleaching. It would have been especially obvious to use a two D-stages separated by extraction rather than a the single D-stage of EP 622 491 as the use of two chlorine dioxide stages (DED) is known to give higher brightness without significant strength loss than a single stage as taught by the SINGH text, e.g. page 127, 10-13.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

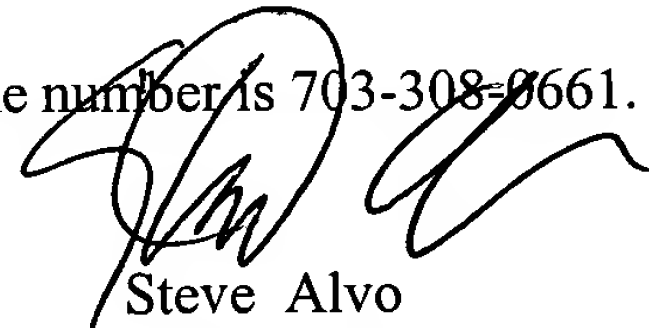
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however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steve Alvo whose telephone number is 703-308-2048. The examiner can normally be reached on 6:00 AM to 2:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on 703-308-3837. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Steve Alvo
Primary Examiner
Art Unit 1731

MSA
February 28, 2002